

REMARKS

Claims 16-20, 22, 24, 30 and 32-37 are all the claims pending in the application. Claims 36 and 37 have been allowed and claims 16-20, 22, 24, 30 and 32-35 stand rejected.

Claim Rejections - 35 U.S.C. § 102

On pages 2 and 3 of the Office Action, the Examiner rejects claims 16, 22, 24 and 30 under 35 U.S.C. § 102(b) as being anticipated by newly cited EP 0 810 430 (“EP ‘430”). The Examiner notes that he now cites EP ‘430 because the “twofold” and “2:1” features were removed from claims 16 and 30, respectively (*see* item 2 on page 2 of the Office Action).

Applicants have amended claims 16 and 30 to reintroduce the “twofold” and “2:1” features previously removed from those claims. As the Examiner apparently recognizes, EP ‘430 does not teach or suggest that the electrodes 78a, 78b differ by more than twofold. Therefore, claims 16 and 30 are believed to be allowable over EP ‘430 and claims 22 and 24 are allowable over EP ‘340 at least by virtue of their dependency from claim 16.

Claim Rejections - 35 U.S.C. § 103

On pages 3-5 of the Office Action, the Examiner maintains the rejection claims 16-20, 22, 24, 30 and 32-35 based on the combination of Kato (U.S. Patent No. 5,672,811; “Kato ‘811”) and Makino et al. (U.S. Patent No. 5,676,811).

On pages 5-8 of the Office Action, the Examiner rejects claims 16-20, 22, 24, 30 and 32-35 based on the combination of JP 10-38845 (“JP ‘845”), Kato ‘811 and Makino. The Examiner previously rejected these claims based upon just the JP ‘845 and Makino references alone. Kato ‘811 has been added to the combination as teaching that the electrodes are comprised of porous platinum. Applicants respectfully traverse these rejections.

Fig. 2 of Kato '811 is cited by the Examiner as showing electrode 28 having a side edge more than twice as long as that of electrode 24. Accordingly, the Examiner reasons that if both electrodes are presumed to have the same width, electrode 28 would have an area more than twice that of electrode 24. The Examiner relies on Fig. 2 of Makino as showing that it was known in the art to extend the electrodes of a gas sensor over the entire width range of a given chamber (citing electrode 8 and reference electrode 13).

Applicants respectfully traverse this rejection for several reasons. Particularly, the combination of Kato '811 and Makino fail to teach or suggest each and every claim limitation. Yet, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.¹ It is respectfully submitted that (1) the Examiner is not entitled to make a presumption about the length of the Kato electrodes, (2) nothing in Kato gives any indication that the electrodes are of the same width, and (3) it would not have been obvious to modify Kato to provide electrodes of the same width.

Initially, Kato '811 does not teach anything regarding the relative areas of the positive and negative electrodes. Kato only shows the lengths of the electrodes 28, 24, but nothing about their widths. The Examiner acknowledges this, but asserts that Kato Fig. 2 teaches that the length of electrode 28 differs by at least two-fold from the length of electrode 24. However, in order to arrive at this conclusion, the Examiner improperly relies on the proportions of drawings which are not to scale. The drawings are not sufficient to teach that the lengths differ by at least

¹ *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

twofold and thus, even if the electrodes did have the same width, Kato '811 would not teach that they differ in area by at least twofold.

Furthermore, Makino also fails to teach the claimed difference between the areas of the positive and negative electrodes and one of ordinary skill in the art would not have modified Kato with Makino. Even if Kato '811 and Makino were combined, the combination would still be deficient at least because neither reference teaches the claimed difference between the areas of positive and negative electrodes.

Particularly, the Examiner is taking a drawing from Makino which show the electrodes extending over the entire width of the chamber, and reasons that it would likewise have been obvious to extend the electrodes of Kato '811 over the entire width of the chamber. However, there is nothing in the cited prior art as to why it would be desirable to employ such an electrode arrangement, or why such electrode arrangement should be applied to the sensor of Kato '811 having a two-chamber structure entirely different from that of the sensor of Makino.

By applying Makino to Kato '811, the Examiner arrives at a modified sensor said to inherently have an area of the negative electrode and area of the positive electrode differing by at least twofold. However, this does not teach the subject limitation of the present claims, or the advantages thereof and one of ordinary skill in the art could not have arrived at such an arrangement in the absence of Applicants' teachings in the specification. Absent the discovery of reduced resistance when the area ratio is set as defined by the present application, there would have been no motivation for one of ordinary skill in the art to make the claimed invention.

For the above reasons, it is respectfully submitted that the present claims are allowable over Kato '811 in view of Makino. Additionally, JP '845 and Kato '841 are similar disclosures, and the Examiner's application of Makino to JP '845 also suffers from the same deficiencies as outlined above. The addition of Kato '811 to the combination of Makino and JP '845 is only for allegedly teaching porous platinum electrodes and does not correct the deficiencies of the Makino and JP '845 combination with respect to the claimed difference in area of the electrodes.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


Stephen R. Valancius
Registration No. 57,574

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
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CUSTOMER NUMBER

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